

A New Life for Prime Western Smelter Site In Gas, KS

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The Prime Western Smelter site includes approximately 100 acres of industrial, agricultural, and residential land within and south of the city of Gas in Allen County. In the late 1890s, zinc and lead smelters were built and operated on portions of the site. A tornado destroyed the smelters in 1918, along with most of the city of Gas. Wind and water spread waste to surrounding property. Cinders and other waste were also used for fill and road base material throughout the area.

Beginning in 1981, KDHE and EPA conducted multiple investigations at the site in response to local concerns about site conditions. Lead and other metals found in surface soil at nearby residences and businesses exceeded the levels considered safe for human exposure. KDHE has set risk-based exposure limits for lead in soil of 400 milligrams per kilogram (mg/kg) for residential land, and 1,000 mg/kg for non-residential land.



August 2002. (Left) Cinders, slag, and debris covered the surface at the location of one of the former smelter works. Soil in this area was so contaminated that it was unable to support vegetation. (Below) It was chosen as the repository for soil from the rest of the site.



The current property owners had no connection with the smelting operations. Corporate ownership of the former smelters could not be traced to an existing company to fund an environmental cleanup, so KDHE referred the site to EPA for a removal action.

KDHE and EPA worked together to develop a plan to address the site and protect the public. Massive foundations, extensive slag, and thick deposits of cinders in one 25-acre parcel made excavation impractical, and the area was chosen as a repository. Contaminated soil was excavated from surrounding properties, moved to the repository, mixed with a stabilizing agent to prevent future migration of the metals into groundwater, and spread to form a smooth surface.

A clay cap was placed over the stabilized soil, and graded to promote natural drainage and prevent erosion. A final layer of topsoil and grass seed completed the cover. Rock was placed on steep banks along existing drainage ditches to prevent erosion. The repository

was fenced to restrict access, and will be inspected regularly to ensure that the cap is not deteriorating. The owner of the repository site agreed to file a deed notice restricting future use of the land to activities that will not damage or penetrate the cap.

August 2004 - Construction of the repository.
Stabilized (dark) soil is being spread and covered with clean brown clay. Stockpiles of stabilized soil can be seen on the right.



Above: A rocky bank along the west fence of the repository.

Right: Looking north from the south entrance. This is the same area shown in the August 2002 photos.



November 2004 - Completed repository.



Residential lots were excavated until remaining soil was below 400 mg/kg, backfilled with clean soil, and seeded with grass. Non-residential areas were excavated until remaining soil was below 1000 mg/kg. These areas were either covered with gravel, backfilled and seeded, or re-graded and seeded, depending on previous condition, the owner's preference, and cost equivalence.



Restored residential (left) and non-residential (center and right) parcels.

